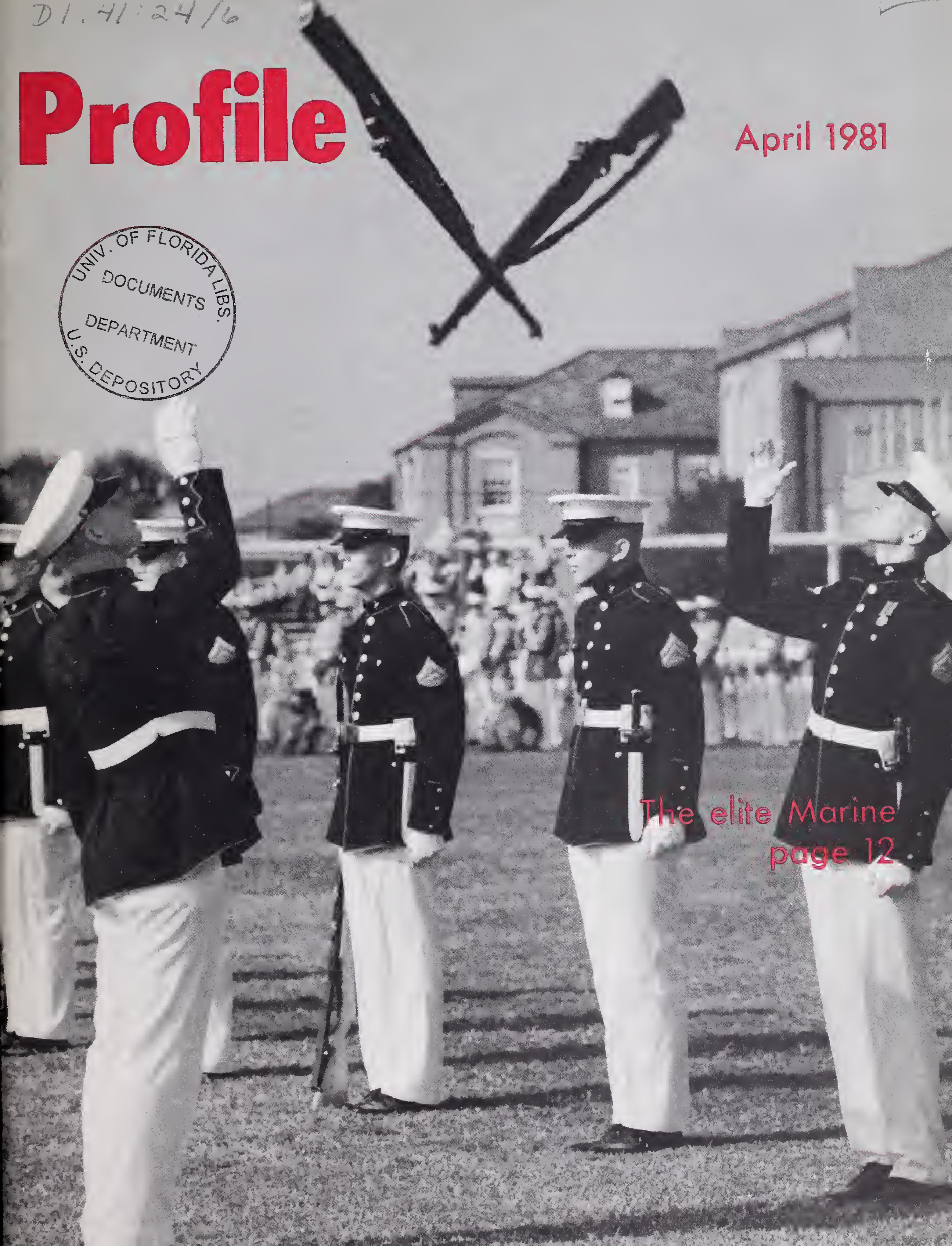
D1.41:24/6

Profile

April 1981

UNIV. OF FLORIDA LIBS.
DOCUMENTS
DEPARTMENT
U.S. DEPOSITORY



The elite Marine
page 12

Memo to readers

With the ongoing trend in the military toward more technologically advanced systems and weapons, the services are placing increased emphasis on education.

One of the more attractive benefits of military service is the opportunity for further education, both military and civilian. These programs are designed to fulfill service requirements, increase the general educational level of the service member and provide financial assistance in exchange for specific periods of active duty.

The services offer various types of programs which provide studies at the post secondary level in academic and vocational/technical subjects leading to associate, undergraduate or graduate degrees. With programs ranging from the Army's Continuing Education System on each installation to the Community College of the Air Force to the Navy's Program for Afloat College Education conducted on shipboard at sea, the services are committed to providing continuing education opportunities for interested service members.

The most commonly used path to higher education is tuition assistance. For active duty personnel, the services will pay from 75 to 90 percent of tuition costs, depending on rank, years of service and specialty, for undergraduate and graduate courses. The program requires that courses be taken off-duty and at accredited institutions; however, many classes are conducted right on the installation in order to meet the demand and facilitate enrollment. No military obligation is incurred for enlisted members who utilize tuition assistance. The program differs in the Coast Guard in that the amount paid is based on the cost per semester hour and there is a one year service obligation upon completion.

For active duty enlisted personnel desiring a college education and an ultimate commission as an officer, the services offer enlisted commissioning programs and opportunities for Reserve Officers' Training Corps scholarships. These programs allow the qualified individual to attend college full time in a resident status. Provision for tuition, fees and pay and allowances vary for each service. Upon graduation and commissioning, the new officer incurs a military obligation of four to six years, depending on specialty. More information on ROTC can be found in the December 1980 **PROFILE** Memo to readers.

These are but a sample of the many and varied types of programs that are available for service members desiring to continue their education. The opportunity to expand one's educational horizon is limited only by the vision of what is desired.

Profile April 1981 Vol. 24, No. 6

Staff

Director	Captain V.L. Knaus, USN
Deputy Director	Captain L.J. Hockman, USA
Administration/Circulation	Technical Sergeant W.J. Taft, Jr., USAF
Editors	Staff Sergeant Roger Allen, USA
	Technical Sergeant Wilt Baker, USAF
	Staff Sergeant Bill Wright, USMC
Associate Editor	Chief Warrant Officer P.M. Short, USCG

PROFILE (USPS 485-850) is published monthly October through December and February through April by the High School News Service, a Department of Defense activity at Norfolk, Va. Distribution is free directly to junior and senior high schools, colleges, universities, libraries, career centers and ROTC units requesting the service.

The purpose of this magazine is to inform young people and guidance personnel about benefits, opportunities, privileges and programs of military service.

The Secretary of the Navy has determined that the publication of this periodical is necessary in the transaction of the public business required by law of this Department. Use of funds for printing this publication was approved by the Office of Management and Budget on Dec. 2, 1980.

Unless otherwise indicated, all photographs used herein are official military photographs. Reproduction of articles and supporting photographs is authorized provided proper credit is given.

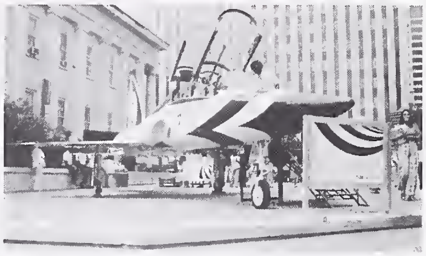
Inquiries may be directed in writing to the return address or by calling (804) 444-4871/2828 or (AUTOVON) 690-4871/2828.

Controlled circulation paid at Norfolk, Va.

Cover photo by Cpl. Carl Flowers

Back cover photo by Roger Allen

'Show and tell' Air Force style

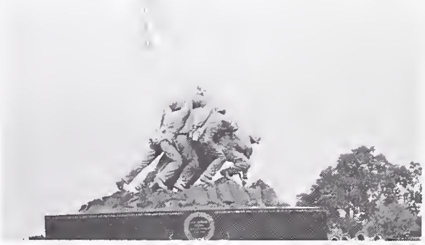


Page 4

Keeping the fleet 'fired up'

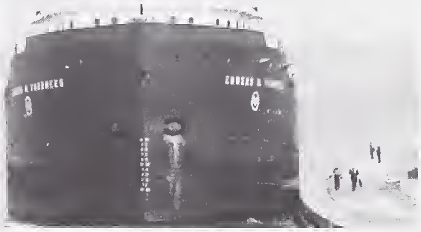
Page 8

'Spit-polished and razor-sharp'



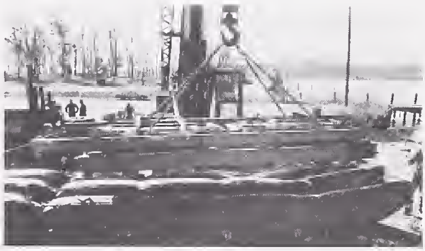
Page 12

Aids to navigation...that's our road



Page 16

Bridging the gap



Page 20

'Show and tell'

Air Force style

Story by Mike Cundiff

Forty students file inside the mobile theater van and sit down. Following a brief introduction, the lights fade and the show begins. Using five screens, 15 slide projectors and a stereo sound system, a computer delivers a 950-slide presentation called "Pioneers of Flight." During the next 15 minutes, the students will get a look at the lives of some of the great Americans who pioneered aviation, from Kitty Hawk to the moon.

"Pioneers of Flight" is one of several exhibitions being presented simultaneously around the country in support of aerospace education and Air Force recruiting. It is presented by the Air Force Orientation Group (AFOG), the official exhibit unit of the Air Force.

Operating out of Wright-Patterson AFB, Ohio, AFOG sends exhibits to 1,800 sites each year throughout the United States and abroad. An estimated 20 million people see these exhibits annually, up to one-third through direct contact. Approximately 500,000 high school students visit AFOG theater or cockpit vans yearly.

"Our travel program covers the nation," said Col. Arthur F. Creighton, Jr., AFOG commander. "During these past two years alone, we visited approximately 3,000 high schools. We try to ensure that all states in the Continental U.S. receive our exhibits. In both 1979 and 1980, we visited 47 of the 48 states. Somehow, circumstances didn't permit us to reach 100 percent, but at least we didn't miss the same state both years."

The theater van show is the kingpin of the AFOG program. It began in 1974, when AFOG was put in charge of the Armed Forces Bicentennial Caravan Project—one of the largest Defense Department contributions to the nation's 200th anniversary. As part of the celebration, a caravan of four theater vans toured the nation, telling the stories of the Air Force, Marine Corps, Navy and Army. Out of that grew AFOG's primary presentation for high school audiences.

Beginning with the 1980/81 school year, AFOG began touring its third theater van show, "Pioneers of Flight." By presenting vignettes of selected aviation pioneers, the show highlights the progress of American aviation from the beginning of powered flight through today's space age, and provides a preview of aerospace plans for tomorrow. It concludes with a brief reference to Air Force people and job opportunities in the Air Force.

"We are committed to presenting a program that contributes to the education of American youth," said Col. Creighton. "Our exhibits tell stories about airpower and the people who have made our astonishing 20th century advances possible."

Another popular high school exhibit is the cockpit van. Featuring a real jet cockpit, the exhibit combines films and sound to create the sensation of a 600 mile-per-hour flight at an altitude of 200 feet. Students "flying" the jet, view

An aircraft mechanic, Staff Sgt. Willis Ison, Jr., performs routine maintenance on a T-38 Talon aircraft exhibit. No longer at home in the skies, Orientation Group aircraft are disassembled and transported down the road on flatbed trucks. (Photo by Staff Sgt. Dwight Williams)

Master Sgt. Mark Young, an aircraft mechanic assigned to the Orientation Group as a model builder, completes work on a 1/72 scale model of a PT-22 Trainer to be used in an exhibit. (Photo by Staff Sgt. Dwight Williams)

segments of low-level, roller-coaster film footage over mountains and through valleys. Besides the cockpit, the van features a theater which shows a film highlighting various aspects of Air Force life.

Other exhibits in the active inventory include six full-size aircraft (for display at major community events or malls and shopping centers), art shows, space rings and panel displays to name a few. Probably the most elaborate production is the computer-operated, sensor-controlled educational exhibit, which is permanently located at Chicago's Museum of Science and Industry.

Each exhibit is an AFOG product. Military and civilian personnel assigned to the Group's Creative Communications Division conceive and design every exhibit. The Production Division builds each exhibit from scratch. Although the theater van shows are collaborated on with contractors, all are conceived and directed by AFOG personnel. The AFOG Transportation Branch has a crew of long-distance truck drivers who transport some of the most delicate and demanding loads on the highway. Each military member assigned to the Group has a dual function as a technician in his or her career field and as an exhibitor.

According to Chief Master Sgt. Russell Betts, AFOG's operations superintendent, each AFOGer (unit person) is as much a part of the show as the exhibit itself. "AFOGers are exposed to millions of Americans each year throughout the United States; therefore, our standards are high. Frequently we are the only exposure some people get to the Air Force. Since they associate our one-time presentation with the Air Force for years, we strive to ensure that the association is favorable.

"To that end, each AFOGer is hand-selected and receives intensive training on display duty and the particular exhibit he or she accompanies. AFOGers pride themselves in the honesty of the presentation, the appearance of the exhibit and their uniforms."

The formula must work. Letters that pour into the Group almost daily extol the value of the presentations and ask for more.

A letter from Jackson-Milton High School, North Jackson, Ohio reads: "The slide presentation of 'The History of Flight' was very informative, quite interesting, and quite frankly, one of the finest displays that I have seen in my 12

A popular Orientation Group exhibit, the F-4 Phantom aircraft, is displayed at many community events throughout the United States each year.

Spectators line up outside an Orientation Group van. The van features a real jet cockpit, plus a theater which shows a film highlighting various aspects of Air Force life.

Staff Sgt. Tim Toothman fashions a piece of metal for use on an aircraft viewing stand with the Air Force Orientation Group. Group personnel perform a dual mission; they perform their regular Air Force specialty, plus travel throughout the country with AFOG exhibits.

years in education...You are more than welcome to come back to Jackson-Milton anytime in the future.''

From the Connellsville Area School District Senior High School, Connellsville, Penn: ''The visit of your Air Force Orientation Group van to our school was appreciated and well received by our students. In fact, a two-day visit might be planned for the future.''

''Myself, as well as most of our staff (were) treated to a sharp first class presentation,'' reads a letter from Franklin Country Area Vocational-Technical School in Chamersburg, Penn. ''The visual graphics, sound and, most of all, the message relating to the history of aviation and the support personnel that make it all possible was the best that I've witnessed.''

Most AFOG exhibits are scheduled six months in advance and tour along a planned route. They are typically shown at high schools, conventions, fairs and other community events. Air Force recruiting requirements are normally given top priority for use of the exhibits. High schools and other civilian organizations wanting to use the exhibits may request them directly from the Orientation Group, but chances of getting exhibits are better if the requests are channeled through local Air Force recruiters.

Mile after mile, exhibit after exhibit, the Air Force's Orientation Group provides a means for young and old to learn the aviation story, while showing the nation the Air Force is a ''Great Way of Life.''

Footnote: Request forms are available from AFOG/XO, Wright-Patterson AFB, OH 45433

A student takes control of the throttles of a B-52 jet aircraft console inside a cockpit van. The van combines film and sound to create the sensation of flying at 600 miles-per-hour at an altitude of 200 feet.

Keeping the fleet 'fired up'

The coal mines and mountain air of the Appalachian Mountains are a far cry from the 100-plus degree heat in the fire rooms of the guided missile destroyer USS Towers. But Gary L. Stevenson, a boiler technician from Hewitt, W. Va., has experienced both, and finds himself right at home in the latter.

Boiler technicians operate shipboard equipment that produces steam for propulsion engines and generating electric power. They clean, maintain and repair boilers, boiler fittings and auxiliary machinery such as steam turbines, pumps and air compressors. They also inventory and test fuel and water, operate and maintain automatic control systems for boilers, plus keep operating and maintenance records on machinery.

Navy boiler technician Gary L. Stevenson prepares the first boiler of his ship for operation prior to getting underway. Stevenson is one of more than 10,000 boiler technicians in the Navy. (Photo by Cheryl Campbell)

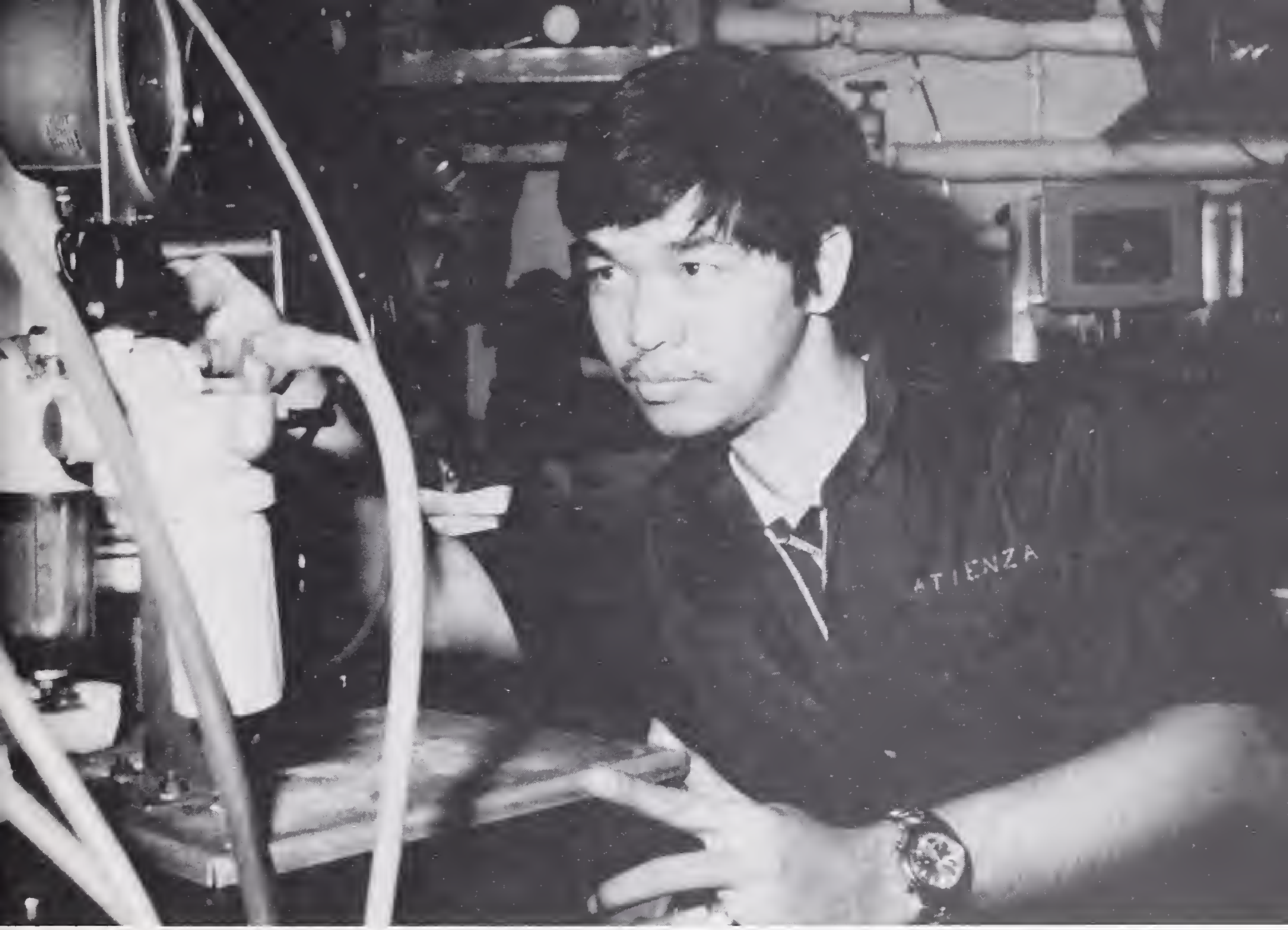
"As the leading petty officer in the boiler division of the engineering department, I direct all of the men in the division—from cleaning the spaces to operating and maintaining the boiler," remarked the 31-year-old petty officer first class.

Bobby Bedford, a 1977 graduate of John C. Fremont High School in Los Angeles, stated that without boiler technicians, ships wouldn't be able to carry out their missions. "I get a lot of personal satisfaction from my job knowing that I'm doing something that's important."

One of 10,000 Navy men and women working in the boiler technician field, Bedford operates a steam propulsion plant and auxiliary equipment. "I'm also a burnerman," he said. "It's my job to ensure that the fires in the boilers don't go out."

A burnerman is also responsible for lighting off boiler fires, Bedford explained. Lighting a boiler takes five men who coordinate their efforts in feeding the right amount of fuel, air and water into the fire box. The burnerman also ensures that all planned maintenance is performed on equipment to keep the machines running smoothly. "I especially like working with the heavy gear," stated Bedford.

In addition to lighting off fires, the



Boiler technician Nestor S. Atienza works in the automatic boiler control shop on the aircraft carrier USS Kitty Hawk. Boiler technicians operate shipboard equipment that produces steam for propulsion engines and generating electric power. (Photo by Ken Chamberlain)

average boiler technician must know about 200 main valves of the nearly 1,000 found in the boiler room. They have to be able to diagram each system from memory before they are qualified to stand watch.

Men and women who want to enter the boiler technician rating should have clear speech, physical stamina, manual dexterity and the ability to work with others as a team. They should know how to use common hand and power tools, and enjoy working with mechanical devices. Also desirable is a good knowledge of math—to include fractions and decimals.

Enlisted personnel are taught the fundamentals of the rating through on-the-job training or formal Navy schooling. The school is located at the Great Lakes Naval Base, just north of Chicago. The basic technical school, three weeks long, is taught in group instruction and practical application. During this period, the boiler technician student learns basic technical information including name, purpose and use of hand tools, metal fasteners, valves, pumps, turbines, bearings, gears, air compressors, precision measuring tools and indicating devices.

The entry skill level or Class ''A'' technical school is four to seven weeks of individualized instruction, featuring audio-visual presentations, hands-on job practice, and watchstation indoctrination training in an operating steam plant. After completing ''A'' school, boiler technicians are normally assigned to steam-powered ships or Fleet Maintenance Assistance Groups.

When Petty Officer 3rd Class Jeffery L. Mania enlisted in the Navy in September 1978, he was looking for more education. After attending the boiler technician's schools, he is confident he has achieved his goal. ''I feel my greatest accomplishments so far have been the high scores I've been able to maintain during my Navy schooling,'' Mania stated. ''I feel the training has helped me in my work as 'oil king' aboard the USS Beary.''

As oil king, Mania keeps the water in the ship's propulsion plant boilers and fuel for the ship's engines as pure as possible; a task not always easy. Purity of fuel and water is necessary because of high pressures and critical temperatures required. For instance, the modern naval ships use both 600 psi and 1200 psi steam systems for propulsion and to run auxiliary

Stephen M. Hawkins, a 1976 graduate of Callisburg, Texas, High School, is a Navy boiler technician aboard the guided missile cruiser USS Wainwright. Hawkins operates and maintains automatic boiler control systems. (Photo by Mike MCGougan)

machinery—evaporators, electric generators, etc. For aircraft carriers, the system is superheated from 875° to 950°F for launching the aircraft from the catapults, so the purity of the water is mandatory to prevent clogging of the tubes. The purity of the fuel is equally mandatory to maintain the high pressure to the fire boxes for uninterrupted operation of the boilers.

"There are all kinds of things that can foul water and fuel," he explained. "I have to make sure the water stays within specified chemical limits, and I have to be on the lookout for water and sediment in the fuel. The job's not easy, but it's a good feeling to know your work is vital to the ship's operation."

Boiler technicians work within the hull of a ship in fire rooms (boiler rooms) or in shops located below the water line. Although modifications are continually being made to improve their

Petty Officer 3rd Class Richard Van Boerum checks for contamination in oil samples aboard the guided missile destroyer USS Towers.

Boiler technician Bobby Bedford conducts a check of the damage control equipment.

working conditions, boiler technicians still work in hot, noisy areas. They are required to perform some heavy physical work. As an engineer, a boiler technician must be able to work closely with others, oftentimes with limited supervision.

What secrets do boiler technicians have to cope with the long hours, excessive temperatures and persistent noises that often exist in the engineering depths of the ship? ''I think boiler technicians create their own environment,'' said Stevenson. ''Everything we do down there, we do with a great deal of pride—from the man who just reported aboard to the guy who's leaving next week.''

Petty Officer 2nd Class Stephen M. Hawkins enjoys the challenge of his job and dealing with his shipmates in his supervisory capacity. ''I'm in charge of the number two boiler room. I maintain and operate propulsion boilers and auxiliary machinery. My main job is to ensure that this machinery gets proper maintenance,'' declared Hawkins, who supervises 13 people.

There is a large continuing need for boiler technicians. At present more than 10,000 men and women are performing duties in this rating. Shortages exist; consequently, advancement opportunities are excellent for qualified candidates. The increasingly technical requirements of the BT rating call for specialized skills. Additional training is provided by numerous courses of short duration, which are available to interested personnel.

''Since coming into the Navy, I've really felt a part of everything I've been involved in. That's not just at this command, but at every command (where) I've been,'' Stevenson said. ''The jobs that I've done have been recognized.''

Stevenson, who served on the boiler technicians retention study group for the Chief of Naval Operations, continued: ''I still feel the Navy has a long way to go for rewarding people in the engineering rates, but we have to look at it from a realistic standpoint.

''Then as now, it is not going to come easy,'' he said. ''You can't single out one job specialty and say it is contributing more to the Navy than another. Everything has to be addressed from an entire Navy standpoint.''

Stevenson says he doesn't feel the people of the United States realize the enormous responsibilities that the Navy has. ''We're the only military force today that can go in large numbers from San Diego to the Indian Ocean and stay there on station without massive airlifts in order to support us.''

Even though boiler technicians have the dirtiest, hottest and one of the most physically demanding jobs in the Navy, they mostly love their work. As one boiler technician aptly put it, ''Without us, the Navy couldn't get underway.''

'Spit polished and razor sharp'

Story by Bill Wright

Generally, one's vision of a "Marine" is the infantryman in the field—the "grunt" storming the beachhead with his rifle at the ready. However, within that same mold exists the makings of another image—the razor-sharp, spit-polished, parade-ground Marine.

Idolized by children and admired by dignitaries and heads of state, parade Marines have helped make "pomp and ceremony" an integral aspect of military service, while at the same time, preserving the image of highly-disciplined and motivated Marines.

Although most Marine Corps commands display various drill and musical units, none are as well known, or as popular, as those from the famed Marine Barracks at 8th & "I" Sts., S.E., in Washington, D.C.

Affectionately known as the "Oldest Post of the Corps," the barracks was established in 1801 and was used for recruit training and as Marine Corps headquarters throughout the 19th century. It has always been the home of the 140-member U.S. Marine Band, better known as the "President's Own," and it is there that the legendary John Philip Sousa wrote many of his immortal marches while leader of the band during the late 1800's.

Today, Marines at the barracks perform a variety of duties, including providing special security details for the President and various dignitaries, and participating in official ceremonies at the nation's capital. But the barracks Marines are best known for their eye-catching dress parades, musical concerts and precision drill, all adding up to military pageantry at its finest.

"Serving at this barracks is definitely a rewarding tour of duty that allows Marines the opportunity to perform in the limelight, while still being taught the meaning of 'total' military presence and discipline," stated Gunnery Sgt. Ron Kirby, platoon sergeant of the renowned Marine Corps Silent Drill Team. "I don't recommend that someone join the Marine Corps for the glamour, but it's there for them, if they're good enough and have the desire."

It has been stated that "presence and discipline" has subsided somewhat in today's military, but for the 34 Marines that encompass the Silent Drill Team, it is an age-old tradition, finely tuned and as alive as ever.

The Silent Drill Team represents the Marine Corps in joint Armed Forces ceremonies for visiting dignitaries, often appearing at the White House, the Capitol building and various other historical institutions in Washington. The team maintains the year-round capability of performing a 10-minute, fixed-bayonet precision drill without verbal commands. A unique feature of the drill is the single and double rifle inspections in which the inspector, standing six feet in front of the line of armed troops, executes a series of spectacular spins and tosses with the 10-pound, M-1 rifle.

Becoming a member of this elite group is a lesson in dedication and hard work. To begin with, each Marine must be between 5 feet 10 inches and 6 feet 2 inches tall, with weight proportionate to height. Following recruit training, Marines are assigned to one of the ceremonial marching platoons at the barracks, and are then interviewed and auditioned for basic drill proficiency, and selected by the team's platoon sergeant and commander.

"It's a lot of work, but well worth the effort," stated Cpl. J.F. Carles, the 21-year-old rifle inspector for the drill team. "A lot of hard practice and long hours are involved in mastering silent drill techniques," he continued, "but when we are given that fantastic response and reception from our audiences, the hard work and endless practice becomes easier to cope with."

Marines at the historical barracks seem to pride themselves in hard work and dedication as evidenced by another elite unit—the Marine Corps Drum and

The parade staff forms "officers center" on the parade field prior to the Silent Drill Team's performance. Evening Parades are held each Friday, May to September, at the Marine Barracks in Washington, D.C.

The Marine Corps War Memorial in Arlington, Va., is the scene for the Sunset Parade held during the summer months. (Photo by Bill Wright)

Bugle Corps.

Comprised of 63 Marine musicians, the unit was formed in 1934 to augment the U.S. Marine Band and to perform independently at parades and other ceremonies. Today, the renowned musical group serves as a paragon for many similar organizations throughout the country and has become nationally famous for its intricate concerts-in-motion, and outstanding musical capabilities.

In addition to precision drill units, ceremonial platoons and an exciting array of musical virtuosity, Marine Barracks in Washington is the official custodian of the legendary Marine Corps Battle Color with its multi-colored streamers. The Battle Color represents all honors bestowed upon Marine units, as well as all wars and campaigns in which the Marine Corps has participated.

The Battle Color, along with the National Color and two riflemen, comprises the official Marine Corps Color Guard. Together with the Silent Drill Team, Drum and Bugle Corps and marching platoons, ''pomp and ceremony'' is displayed in a presentation known as the Marine Corps Battle Color Ceremony. The ceremony has been presented throughout the country before thousands of people at such places as the Texas State Fair, Disney World and Disneyland. Portions of the ceremony have been presented on several nationally televised programs, in addition to appearances at national sporting events.

Of all the military ceremonies and rituals in which the barrack's Marines participate, they are probably best known for their public parades held at the Marine Corps War Memorial (Iwo Jima Monument) in Arlington, Va., and the evening parades at the barracks.

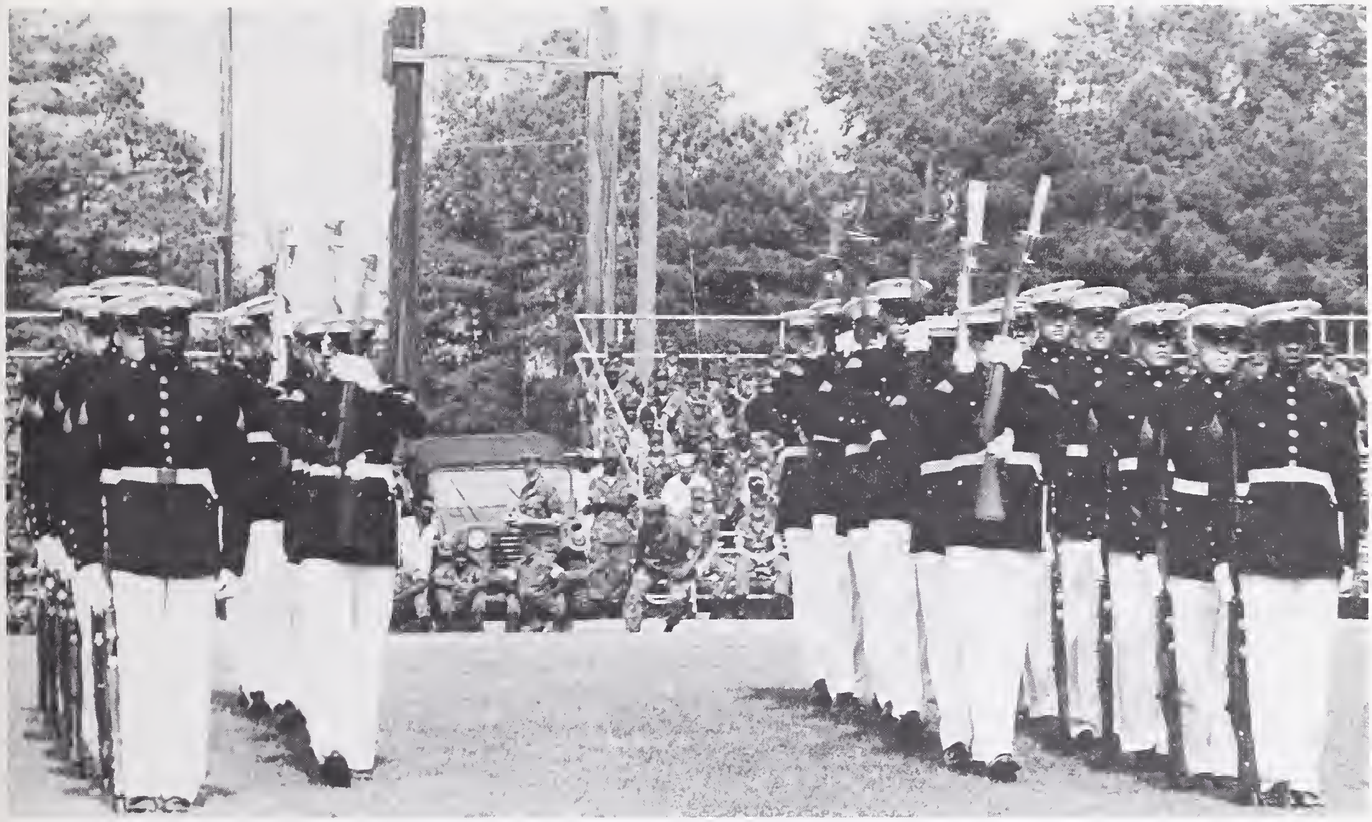
Each Tuesday from June through August, the ''Sunset Parade'' is held at the base of the monument and features the Drum and Bugle Corps, Silent Drill Team, Marine Corps Color Guard and ceremonial marching platoons. With a panoramic view of the nation's capital in the background, the ceremony is rich in tradition and allows for the informal viewing of ''razor-sharp'' Marines displaying their ''pride, pomp and circumstance.''

The barracks at 8th & ''I'' comes alive every Friday evening from May until September with another patriotic ceremony called the ''Evening Parade.'' Known for its breathtaking beauty and precision, the two-hour ceremony features a concert by the Marine Band and the Drum and Bugle Corps, as well as the traditional marches and drill which have characterized military units for decades. The ceremony concludes with a lone bugler sounding ''Taps''—a requiem to those men and women who gave their ''last full measure of devotion.''

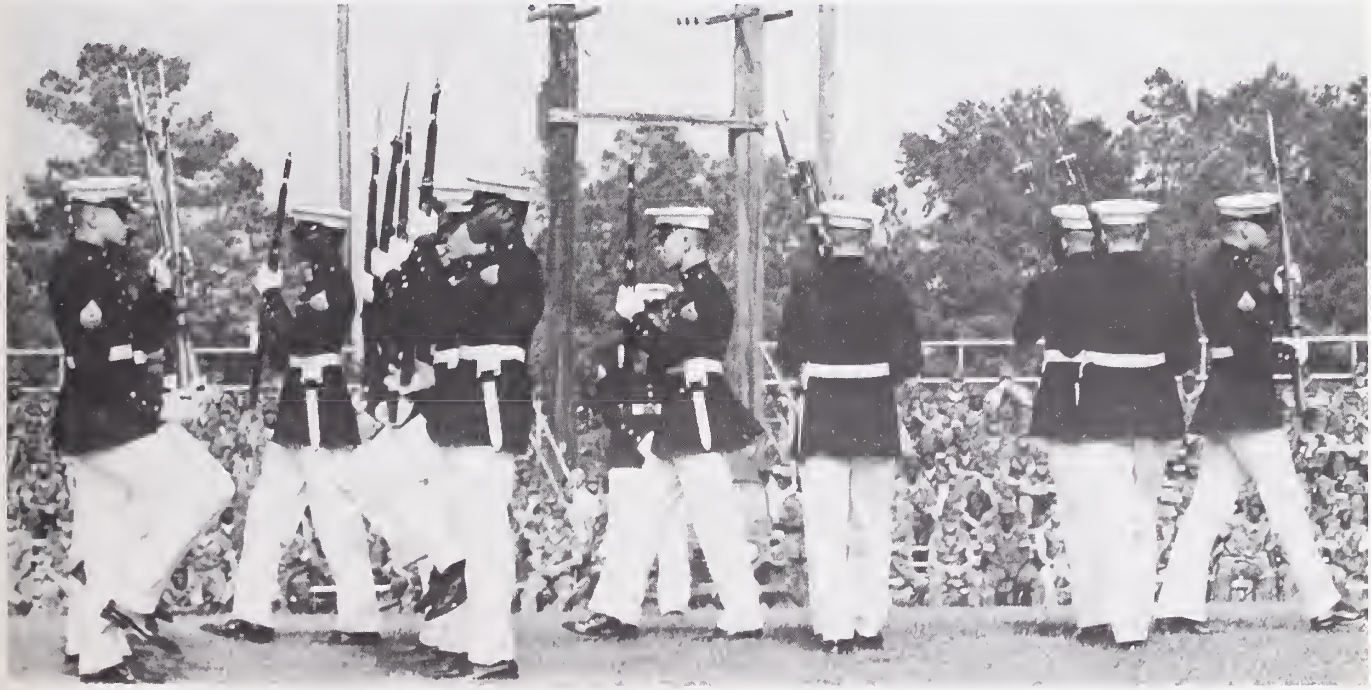
In essence, the Marine Corps is full of pride and tradition, much like each branch of the military, and attempts to display that pride to a yearning audience. Whether it be a drill presentation in Dallas, a concert-in-motion in Florida or marching down Pennsylvania Avenue in an inaugural parade, 8th & ''I'' Marines stand ready—''spit-polished and razor-sharp.''

Footnote: The Sunset Parade, held at the Marine Corps War Memorial in Arlington, Va., is scheduled to begin June 2 at 7:30 p.m. and continue each Tuesday throughout the summer until August 25. Reservations are not required. The Friday evening parade at Marine Barracks is scheduled to begin May 8 at 8 p.m., and continue each Friday until September 11. Reservations can be obtained by writing: Adjutant, Marine Barracks, 8th & ''I'' Sts., S.E., Washington, D.C. 20390 or by phoning (202) 433-4681.

The Marine Corps Drum and Bugle Corps has become nationally famous for its versatility in intricate marching and outstanding musical capabilities. (Photo by Phil Gould)



The Silent Drill Team prepares to perform their most awesome maneuver, twirling the M-1 rifle with fixed bayonets during a ceremony celebrating the Marine Corps' birthday.



Candidates for the Silent Drill Team must endure four months of basic drill, without benefit of verbal commands. Potential team members must meet stringent physical standards.

Aids to navigation... that's our road

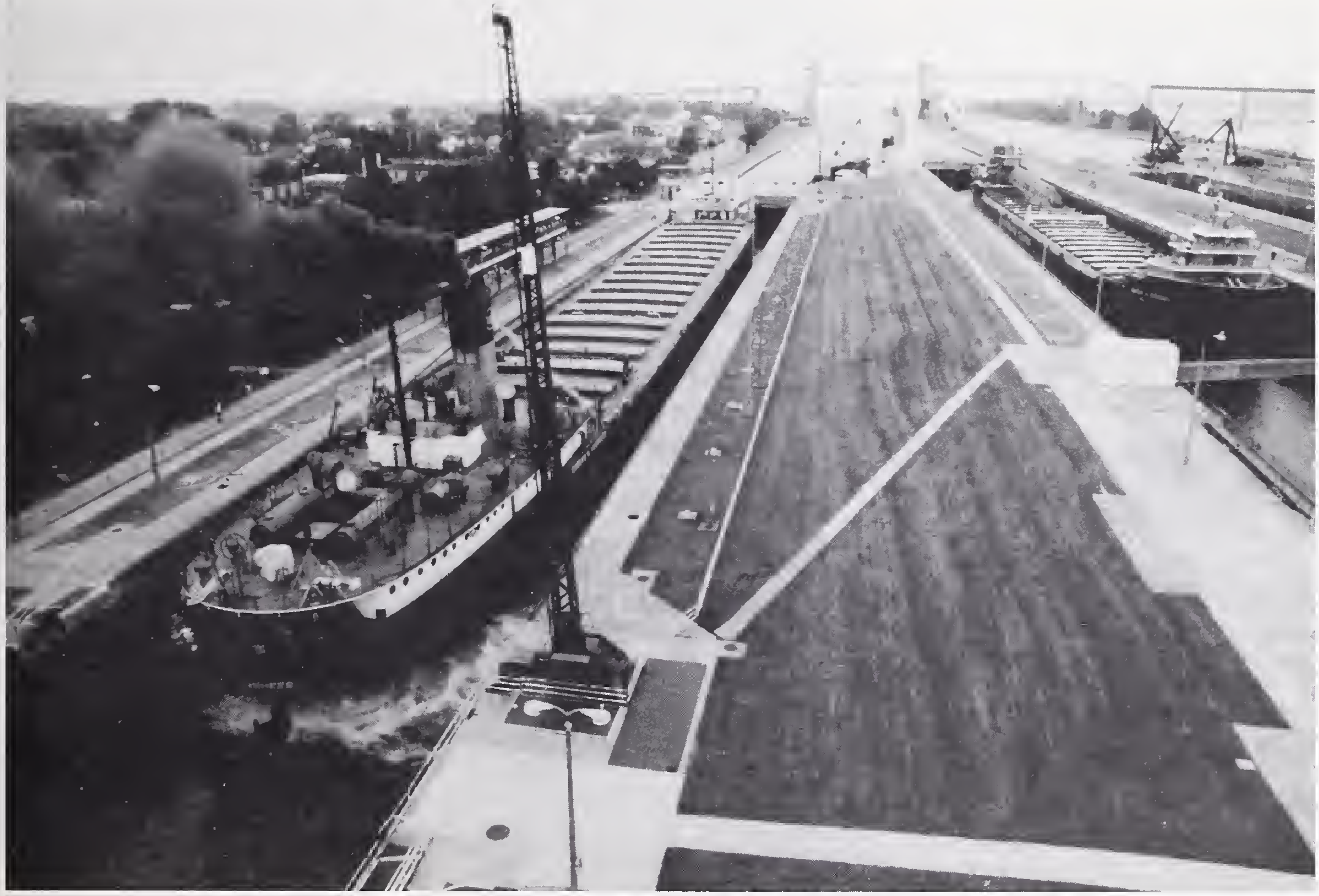
Story by Tom Gillespie

Most of the tourists were gone, but a few hearty souls still braved the near-zero temperatures to watch the ore freighters inch their way through the locks at Sault Ste. Marie in Michigan's Upper Peninsula separating the United States from Canada. Three miles down the St. Marys River the Great Lakes freighter Enders M. Vorhees sat patiently in the freezing waters. It awaited permission from the Coast Guard Control Center before proceeding upriver for its turn through the locks.

The St. Marys Channel is narrow and dangerous, but Capt. William Wilson knew he could rely on the more than 100 visual navigational aids maintained by the Coast Guard for safe passage up the river. The Vorhees is one of more than 9,000 ships that passes by the Center each year during its river passage between Lake Superior and Lake Huron.

Navigation on the river would be a nightmare if it weren't for the dedicated work of the men and women of Soo Control [Soo is the pronunciation of the french word Sault, meaning a falls or rapids in a river. Sault Sainte Marie (So͞o Sānt Mə-rē′) canals consist of one Canadian and two U.S. canals bypassing the rapids of the St. Marys

Perched precariously on a cross beam, Petty Officer 1st Class Dale Dempsey tightens down a bolt on a St. Marys River daymarker. Erecting markers and servicing bouys is a never ending job along the waterway.



The Great Lakes freighter Enders M. Voorhees (foreground) waits in the locks at Sault Ste. Marie on its journey upriver. The Voorhees and the ore carrier headed downriver (upper right), are just two of more than 9,000 ships that use the locks each year.

River and providing ship passage between Lake Huron and Lake Superior. Also called the "Soo Canals."] of Coast Guard Group Sault Ste. Marie. It's a hard, demanding job, one that won them the 1980 National Defense Transportation Award for their outstanding work.

"We need Coast Guard control," Captain Wilson said. "Otherwise, there'd be no control at all. Everybody would just try to nose the other guy out. That's the way it used to be years ago."

At times the Control Center seems like an air traffic control tower, buzzing with radio transmissions to and from ships awaiting their turn through the locks. When the river becomes unnavigable because of fog or an accident, personnel at the Control Center must make the decision to halt all traffic, and then tell the ship captains in what order to proceed.

Group Operations Officer Elizabeth Calhoun has learned that there is more to running the Control Center than just guiding ships up and down the St. Marys River.

"You're trying to keep everyone happy. Soo Control is the vessel traffic system that controls traffic on the St. Marys River. You try to plan everything...and you just try to keep in mind the big picture," she said.

Although the Group is involved in normal search and rescue, and support activities, none of their operations seems as important or receives as much attention as the Aids to Navigation Team. A smile lights up the face of Petty Officer 1st Class Dale Dempsey as he talks about the team and its mission.

"We're talking basically of 100 aids to navigation, and that can keep you busy! Our job here at the Aids to Navigation Team is to maintain the shore aids, keep the (navigation) lights on, and keep the day markers up. When they go down due to weather or part failure, we have to get out there and get them back on as quickly as possible," Dempsey said. "We have a lot of pride in what we do here. It's a very simple message: 'Keep your lights lit.'"

And keep their lights lit, they do. But it takes a team effort.

"The key to the whole organization is maintaining the teamwork. Without the teamwork, the whole system starts to fall apart rather quickly," Executive Officer Thomas Worley stated.

In addition to servicing and replacing lights and buoys, the Aid to Navigation

Coast Guardsmen service some of the many bouys used to mark the narrow St. Marys River in Michigan's Upper Peninsula. Crewmembers of the Coast Guard's Group Soo maintain a network of more than 100 bouys and markers in the area.

Team makes and keeps up day markers, which are similar to road signs along a highway. Chief Warrant Officer Fred Hunke explains, ''Our carpentry shop manufactures all the day markers for the Ninth Coast Guard District...we call them day boards...and they're used for aids to navigation. A day board is a plywood base covered with reflective tape which is put on the plywood with a hot press.''

The Coast Guard at Sault Ste. Marie is also experimenting on the St. Marys River with an electronic Long Range Aid to Navigation System (LORAN). It uses shore-based radio transmitters and a receiver on board each ship. The transmitters send out pulsed signals which the ships receive, measuring the slight difference in time it takes for the signals to travel from a pair of transmitters hundreds of miles apart. The time difference, measured in microseconds, is shown on a readout on board each ship and identified on

Duty Officer Lt. Elizabeth Calhoun and an assistant monitor ship traffic from the Soo Control Center. This operations center is much like an aircraft control tower, directing the flow of shipping in the St. Marys River between Lake Huron and Lake Superior.

Petty Officer 3rd Class Shane Younger prepares a river marker with a flourescent covering to make it easily seen from the bridge of a ship. These day markers are placed on the river bank and used as road signs.

LORAN charts by a curved ''line of position.''

LORAN then tells the ship's captain his location, with an accuracy of plus or minus one quarter mile.

Chief Warrant Officer John Marshal explains it more simply. ''It's really an electronic road map that guides ships through the river. It provides information to a user, who has the proper receiver, so that he will know exactly where he is. At the present time we're trying to get this down in the range of 20 foot accuracy.''

Few places in the country epitomize the need for Coast Guard control and the services they perform more than along the St. Marys River. Capt. Wilson best sums up the Coast Guard's important role in keeping the ships moving safely along the river:

''Aids to navigation...that's our road; it's very important. You don't get a second chance around these corners. You gotta have the aids.''

INFLATE NOT
OVER 2 P.S.I.

Bridging the gap

Story by Roger Allen

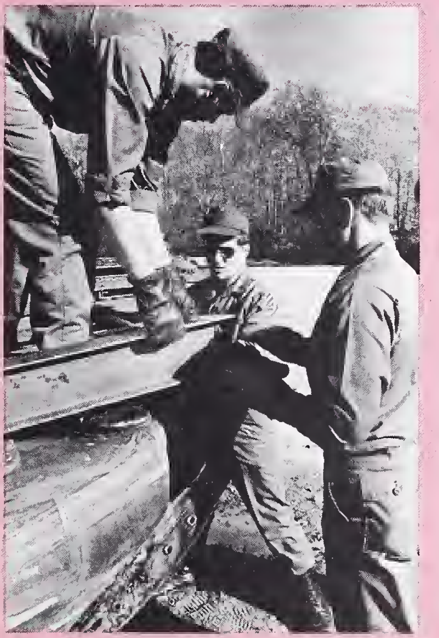
It's been said that the shortest distance between two points is a straight line. Army bridge specialists make going the shortest distance possible by bridging uncrossable areas.

As spans must be constructed under a variety of circumstances, utilizing a wide range of equipment, bridge specialists are trained to withstand prolonged physical exertion and to work under adverse conditions. They must be proficient in the use and operation of tools and equipment necessary to build various types of bridges.

Though most of the work required of the bridge specialist is physical, much of it is mentally demanding. A strong background in math is an advantage to the newcomer and the old pro alike. Distances to be crossed, the type of bridge to be used, the type and strength of braces required, and the number and type of vehicles that the bridge can hold are all mathematical equations that must be answered prior to the actual construction of a bridge.

The Bridgeman Primary/Technical Course, located at Fort Belvoir, Va., provides the training to solve these equations in order to erect the right bridge for any situation. The course includes instruction in the characteristics, classification, design and construction principles and procedures for the types of bridges in use by the Army.

There are six types of bridge systems in which the bridge specialist receives instruction. The mobile assault bridge (MAB) is a self-contained vehicle, maneuverable on land and water. It moves into position and unfolds into a ready-to-use bridge. The M4T6, 60 ton float and fixed span with universal trestle, is a bridge built on pontoons that can be trestle-set on dry land or used as a float bridge. The light tactical raft can be utilized as transportation by itself or as support for the superstructure of a bridge. The ribbon bridge is composed of aluminum boats which are individually launched and then connected to make a span. Lastly, the medium girder bridge and the Bailey bridge consist of a steel framework which is constructed and placed in sections.



Use of physical strength is necessary in bridge building.

Prior to attending the Bridgeman Primary/Technical Course, however, the bridge specialist has already had substantial experience and training in bridge construction. Training begins with the basic bridge crewmen course at Fort Leonard Wood, Mo., in which students receive instruction in combat engineer subjects. Demolition, minefield layout, obstacle placement and power tools, as well as basic bridge building, are taught here.

As bridge construction is just one of the spheres that combine to make up the field of combat engineers, during training some of the material from other engineer courses overlaps into that of the bridge specialist. As an example, explosives may be needed to help clear a selected site for construction of a bridge. Though bridge specialists must have some basic knowledge of how to handle explosives and the necessary paraphenalia, they are limited to the types and quantities they can use without the assistance of a demolition expert. Another example is the use of tools and equipment not within the normal realm of bridge work. A bridgeman must be able to operate equipment such as a pneumatic compressor, which is used to inflate the light tactical raft.

Knowledge in the control and use of heavy equipment is required. Some of the bridges, such as the M4T6, are assembled on land and then moved to the water by a crane. Heavy equipment, including the crane, is also used in the construction of the larger steel frame bridges. In addition, bridge components can be airlifted and positioned by helicopter. When a bridge is being lifted by crane from the shore to the waterway or by helicopter from the construction site to the area to be spanned, a bridge specialist must be adept at the use of hand and arm signals to safely direct maneuvers.

Following the general engineer related instruction, bridge construction training focuses on knowledge of equipment used in bridge building and the types of bridges used. Soldiers learn to perform less technical tasks, such as site clearing and preparation prior to bridge construction. They then become acquainted with the six types of

Hand signals are used to help guide the crane operator when he positions the M4T6 superstructure upon inflated pontoons. Though no longer in the active Army inventory, the M4T6 is used for training new bridge specialists.

With the superstructure in position, students of the Bridgeman Primary/Technical Course secure the pontoons and the separate sections of the superstructure to each other.

Army bridge systems.

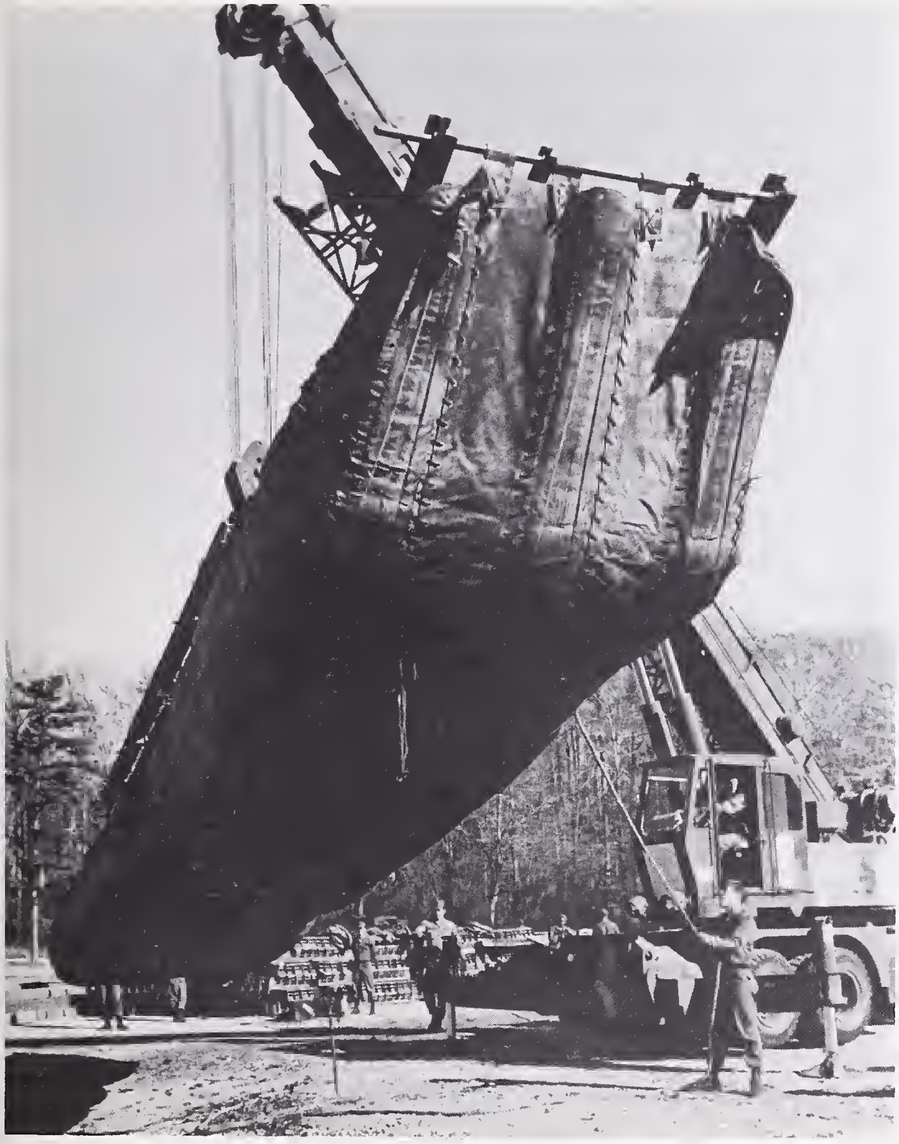
Upon completion of the basic course, the new bridge specialist is assigned to one of the three types of construction units—the mobile assault bridge, ribbon bridge or medium girder/Bailey bridge company. At the unit, primary job skills are learned on the job through instruction featuring hands-on training under the guidance of experienced officers and noncommissioned officers.

1st Sgt. Jimmie L. Barnett of the 264th Engineer Company at Fort Bragg, N.C., a bridge builder with 23 years experience, underscored the unit's training responsibility. He emphasized that it's up to the unit to provide the technical information and skills necessary for bridge construction. Knowledge of such things as site layout and construction procedures comes through experience.

After practical bridge building training and experience in their units, bridge specialists are selected, based on job performance, to attend the Bridgeman Primary/Technical Course. Here the student receives instruction in the use of equipment and material necessary to enable him to evaluate, design and construct military type bridges. The bridgeman receives much more in-depth instruction on the types of bridges required for Army tactical purposes.

To be proficient, a bridge specialist must have the mechanical ability to use tools and equipment. An aptitude for spacial-relations (the use of space), for using plans and drawings, and visualizing structures is important, as are resourcefulness in improvising construction by using available materials. Thus, the Bridgeman Primary/Technical Course is highly technical, as the name implies. It is physically demanding and filled with a variety of training that not only covers actual bridge construction, but also stresses the selection and varied steps of site preparation, selection of the appropriate bridge, and coordinating the use of additional tools, equipment

☆U.S. GOVERNMENT PRINTING OFFICE: 1981—735-027/6



Once a section of bridge is completed, the crane operator, with the help of students manning guide ropes, lifts the section of bridge into the water.

and personnel.

The instruction expands on the experience the soldier has gained since attending the basic school. ''This course is a short one, just five weeks long, and it seems like all of us are getting more out of it than we did when we went through the basic course,'' commented 19 year old Spec. 4 Dean Jump of Ellensburg, Wash.

At the completion of training, the bridge specialist is again assigned to a bridge construction unit, where he can apply and refine his new knowledge. ''Once we get to our assigned units, we will pick up the little tricks of the trade that make accomplishing the job easier. Plus in the unit you get to feel more like part of a team,'' stated Spec. 4 Jump.

''Building any bridge requires a lot of teamwork,'' said Spec. 4 David Engle, a 21 year old from Glenburnie, Md. ''A team can be as small as four to eight people or as large as a platoon (approximately 40 people), depending upon the type of bridge to be built,'' he added.

For the individual who enjoys working with his hands outdoors as part of a team while learning and applying technical skills, bridge construction should be considered. The results of the hard work are readily apparent—a completed bridge.

The bridge specialist—spanning the gap that makes going the shortest distance possible—is the program to look into.

After the sections of bridge are in the water they are secured together, first by ropes and then later by large bolts.

FLARE

UNIVERSITY OF FLORIDA
3 1262 09683 0947

Army bridge specialist
page 20

DEPARTMENT OF DEFENSE

HIGH SCHOOL NEWS SERVICE
BLDG X-18, NAVAL STATION
NORFOLK, VIRGINIA 23511

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

POSTAGE AND FEES PAID
DEPARTMENT OF THE NAVY
DoD-316

U.S.MAIL

Controlled Circulation
Rate